

Juan Miguel de Joya

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acm siggraph, books & comics, writing, scuba diving, coffee/tea, tech+art installations, movies, running, biking, tough mudder, guitar, diy electronics, travel.

EDUCATION

B.A. Computer Science, University of California, Berkeley '15

EXPERTISE

Real-Time Computer Graphics, Computational Physics, Computational Geometry, Mixed Reality (VR/AR)

PROGRAMMING

Languages

C/C++/C#, Python, JavaScript, Lua, SQL

APIs

OpenGL, Vulkan, WebGL2, DirectX11

Libraries

Boost, d3.js, three.js, A-Frame

Packages

Maya, Presto, Katana, Unity, Unreal

WORK

SENIOR SUPPORT ENGINEER, DIGITALFISH AT GOOGLE SPOTLIGHT STORIES

May 2017 – Present

- Developing and prototyping features for Google Spotlight Stories' Story Development Kit (SDK), Maya Plugin, and proprietary renderer.
- Collaborating with directors and artists to rapid prototype and debug tools, simulations, and shaders for 360° and VR short film experiences.

TECHNICAL DIRECTOR RESIDENT, PIXAR ANIMATION STUDIOS

October 2015 – December 2016

- Finding Dory Rendering:** Resolved rendering abstractions in pipeline, optimizing 22 shots. Supported utility scripts for pruning automation and streamlining tools support requests.
- Coco Global Technology:** Developed tool for precise procedural sampling and pattern generation for dynamic topological meshes using guide curves, and developed a plugin for artistic control and direction.
- Tools Quality Assurance:** Automated Pixar's multi-step QA pipeline, which included updating outdated utilities, creating new tools and processes, integrating with existing pipeline infrastructure, and consolidating data flow from test shot creation to fully created test.

SOFTWARE ENGINEERING INTERN – LOOK DEVELOPMENT, WALT DISNEY ANIMATION STUDIOS

May 2015 – August 2015

- Worked with engineers and technical artists to develop automated collision detection and simulation-driven resolution algorithms for artist-driven hierarchical geometric proxies for hair grooming, and implemented said features into Disney's existing hair groom tool.

UNDERGRADUATE STUDENT RESEARCHER, UC BERKELEY VISUAL COMPUTING LAB

May 2012 – May 2015

- Worked under Professor James F. O'Brien as part of the Visual Computing Lab research group. See publications below.

PROJECTS

ASSOCIATION OF COMPUTING MACHINERY (ACM) PRACTITIONER LEARNING GUIDES INITIATIVE (IN PROGRESS)

- Supervising 80 domain experts on to revise ACM Learning Center's practitioner-focused learning guides on AI and VR/AR among other topics.

VR FOR SOCIAL GOOD INITIATIVE (IN PROGRESS)

- Coordinating efforts with The United Nations to provide and distribute VR experiences to children in burn units.

FEATURED TECH ARTIST, CODAME WEBFEST 2017 AT THE PALACE OF FINE ARTS

- Built a multimodal performance art installation that maps WebGL visualizations to a lasers and electronic instruments.

PAULO MACHADO TELEPRESENCE TRAVELING PROJECT, ACM SIGGRAPH

- Organizing conference travel/logistics a 50-year old bed-ridden polio survivor by telepresence robot and through other mobile/accessibility initiatives.

SOFTWARE DEVELOPER - MACHINE LEARNING & MIXED REALITY, THE LUKE HAND PROJECT

- Using machine learning and augmented reality to develop an intelligent training and control system for a bionic hand.

MINDSCAPE VR, SAN FRANCISCO EXPLORATORIUM

- Utilized both the Oculus Rift and Interaxon's Muse brain sensing headband to create a virtual reality environment whose features and states change depending on the user's brain activity. Led a team to build the neurogaming installation for the SF Exploratorium.

PUBLICATIONS/PRESENTATIONS

- Presenter, "Leveraging Mobile, VR/AR, and Web Technologies for Empathic Computing", SIGGRAPH 2017, Visualization Matters 2017
- Course Co-Instructor, "WebGL 2.0 Master Class", Web3D 2017, SIGGRAPH Asia 2017, Visualization Matters 2017 [\[link\]](#)
- Primary Author, "Convergences in Film and Games Technology", SIGGRAPH 2015 [\[link\]](#)
- Presenter, "Building the Brain-Computer Interface of Mindscape VR", SIGGRAPH 2015 [\[link\]](#)
- Co-Author, "Adaptive Tearing and Cracking of Thin Sheets", SIGGRAPH 2014 [\[link\]](#)
- Contributor, "Near-Exhaustive Precomputation of Secondary Cloth Effects", SIGGRAPH 2013 [\[link\]](#)
- Contributor, "Anisotropic Remeshing for Cloth Simulation", SIGGRAPH Asia 2012 [\[link\]](#)

LEADERSHIP

[\[People of ACM\]](#)

- Professional Development Committee, The Association of Computing Machinery
- Real-Time Live! (Real-Time Technologies Showcase) Subcommittee, SIGGRAPH 2018
- Program Chair, Brisbane VR Hackathon, Web3D 2017
- VR Showcase Chair, SIGGRAPH Asia 2016-2017
- VR Village Committee and General Submissions Unified Jury, SIGGRAPH 2017
- Program Committee, Laval Virtual 2017-2018
- Mobile Technologies Committee and Games Focus Committee, SIGGRAPH 2015-2016